

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An apparatus for producing a gypsum wallboard core, the apparatus comprising:
 - (a) a mixer;
 - (b) an extrusion die comprising a die inlet in fluid communication with the mixer, an adjustable top plate, an adjustable bottom plate, and two adjustable side plates defining a substantially rectangular die exit, and a manifold disposed between the die inlet and the die exit, wherein the die inlet is in fluid communication with the mixer and the top, bottom and side plates can be adjusted to a variety of widths and thicknesses, so that the die exit is dimensioned to have a ratio of width to thickness of about 48:1 to about 216:1, and so that a slurry passing through the extrusion die is extruded at a substantially similar thickness and width to that of the finished gypsum wallboard core;
 - (c) at least one secondary inlet having a base connected to at one of the lateral edges of the extrusion die, a top and an elongated tube between the top and the base, wherein the base, the top and the elongated tube form a conduit into and in fluid communication with the extrusion die to allow for the introduction of at least one gypsum slurry additive, which is an emulsion or fluid, directly to the extrusion die, so that the gypsum slurry additive can be added to a gypsum slurry passing through the extrusion die;
 - (d) a substantially flat, movable surface disposed adjacent to the die exit; and
 - (e) a dryer.
2. (Original) The apparatus of claim 1, wherein the mixer is a twin screw continuous mixer.

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3. (Original) The apparatus of claim 1, wherein the mixer is a single screw mixer.
4. (Original) The apparatus of claim 1, wherein the mixer maintains positive displacement of materials in the mixer.
5. (Original) The apparatus of claim 1, wherein the mixer comprises one or more conduits or injection ports.
6. (Canceled)
7. (Canceled)
8. (Original) The apparatus of claim 6, wherein the rectangular cross section has a width of about 4 feet to about 4.5 feet.
9. (Previously Presented) The apparatus of claim 6, wherein the rectangular cross section has a thickness of about 1/4 inch to about 1 inch.
10. (Previously Presented) The apparatus of claim 6, wherein the rectangular cross section has a thickness of about 1/4 inch, about 5/16 inch, about 3/8 inch, about 1/2 inch, about 5/8 inch, about 3/4 inch or about 1 inch.
11. (Original) The apparatus of claim 1, wherein the dryer comprises a microwave heating section.
12. (Original) The apparatus of claim 1, wherein the dryer comprises a convection heating section.
13. (Original) The apparatus of claim 1, wherein the dryer comprises a microwave heating section and a convection heating section.

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14. (Currently Amended) An apparatus for producing a gypsum wallboard core, the apparatus comprising:

- (a) a mixer having a discharge end; and
- (b) an extrusion die having a die inlet that is connected to the discharge end of the mixer, a die exit dimensioned to have a cross-section that is substantially similar to the dimension of the finished gypsum wallboard core, a manifold disposed between the die inlet and the die exit, and at least one secondary inlet having a base connected to at one of the lateral edges of the extrusion die, a top and an elongated tube between the top and the base, wherein the base, the top and the elongated tube form a conduit into and in fluid communication with the extrusion die to allow for the introduction of at least one gypsum slurry additive, which is an emulsion or fluid, directly to the extrusion die, so that the gypsum slurry additive can be added to a gypsum slurry passing through the extrusion die.

15. (Previously Presented) The apparatus of claim 14, wherein the die inlet of the extrusion die has a cross-sectional area that is substantially the same as that of the mixer discharge end.

16. (Previously Presented) The apparatus of claim 14, wherein the die exit has a rectangular cross section.

17. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a ratio of width to thickness of about 48:1 to about 216:1.

18. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a width of about 4 feet to about 4.5 feet.

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19. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a thickness of about 1/4 inch to about 1 inch.
20. (New) An apparatus for producing a gypsum wallboard core, the apparatus comprising:
 - (a) a mixer having a discharge end; and
 - (b) an extrusion die having:
 - (i) a die inlet that is connected to the discharge end of the mixer,
 - (ii) an adjustable top plate, an adjustable bottom plate, and two adjustable side plates defining a substantially rectangular die exit, wherein the top, bottom and side plates can be adjusted to a variety of widths and thicknesses so that the die exit is dimensioned to have a ratio of width to thickness of about 48:1 to about 216:1, and
 - (iii) a manifold disposed between the die inlet and the die exit.
21. (New) The apparatus of claim 20, wherein the bottom and side plates are immovable and the top plate is adjustable to adjust the thickness of the rectangular cross section.
22. (New) The apparatus of claim 20, further comprising at least one secondary inlet having a base connected at one of the lateral edges of the extrusion die, a top and an elongated tube between the top and the base, wherein the base, the top and the elongated tube form a conduit into the extrusion die to allow for the introduction of at least one gypsum slurry additive, which is an emulsion or fluid, directly to the extrusion die, so that the gypsum slurry additive can be added to a gypsum slurry passing through the extrusion die.